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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,646	11/21/2003	Takefumi Okumura	500.42907PX1	9131

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EXAMINER	
WEINER, LAURA S	

ART UNIT	PAPER NUMBER
1795	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,646	OKUMURA ET AL.	
	Examiner	Art Unit	
	/Laura S. Weiner/	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12-3-07 has been entered.

Claim Rejections - 35 USC § 112

2. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is rejected because it is unclear what is meant by “AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the oxyalkylene groups". It is also unclear what is meant by "l, m and n each represents an average degree of polymerization of the oxyalkylene group”. Also, it is unclear what is meant by “l, m, n …and is 1 or more and less than 4 provided that l+m+m is 3 or more”. It is unclear what defines an average degree of polymerization of the three separate chains l, m and n. What defines an average degree is indefinite.

Claim 3 is rejected because it is unclear what is meant by “AO represents an oxyalkylene group of 1-6 carbon atoms and comprises one or two or more of the

oxyalkylene groups". It is also unclear what is meant by "p, q, r, … each represents an average degree of polymerization of the oxyalkylene group". Also, it is unclear what is meant by "p, q, r …and is 1 or more and less than 4 provided that p+q+r and the sum …is 1 or more". It is unclear what defines an average degree of polymerization of the separate chains. What defines an average degree is indefinite.

Claims 12 and 17 are rejected because A0 should be AO.

Claims 13 and 19 are rejected because it is unclear how this further limits claims 1 and 3.

Response to Arguments

3. Applicant's arguments filed 3-5-07 and 12-3-07 have been fully considered but they are not persuasive. The rejection of claims 1-2, 7-8, 11-21 remain rejected under 35 U.S.C. 102(a) as being anticipated by Yokoyama et al. (JP 2002-348323, translation and abstract) or Yokoyama et al. (WO 03/031453, abstract) because Yokoyama et al. ('323) teaches the claimed invention when n=1-4 in the formula XO(AO)nH and Yokoyama et al. ('453) teaches the claimed invention when p=1-4 in the formula B-[O(AO)p-Y]3. The rejection of claims 1-21 remain rejected under 35 U.S.C. 102(e) as being anticipated by Yokahama et al. (6,833,220) because Yokahama et al. teaches the claimed invention when l=1-4. The rejection of claims 1-2 remain rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6, 9, 11, 13 of U.S. Patent No. 6,998,465 because when n=1-4 in the formula X-[O(AO)n-H]a. The claims encompass 1-4 even though the claims claim a range from 0-

600. The rejection of claims 1-2, 7-8 under 35 U.S.C. 102(b) as being anticipated by Nishiura et al. (EP 1 160 268) has reinstated because Nishiura et al. teaches on page 16, that it is known to use acryloyl groups or methacryloyl groups when the oxyalkylene groups are0, 1 or 2. Nishiura et al. teaches on page 37, that Y represents a polymerizable functional group. Applicant argues that l, m, and n represent an average degree of polymerization of the oxyalkylene group of 0-4 but this is not what is stated in the claims. Nishiura et al. teaches compound B-3, where P2=1, q2=1 and r=3.

Claim Rejections - 35 USC § 102

4. Claims 1-21 are rejected under 35 U.S.C. 102(b)/102(e) as being anticipated by Nishiura et al. [(EP 1 160 268 or WO 01/18094)/US 7,045,242].

Nishiura et al.('268) teaches on page 3, a cell comprising a polymeric electrolyte comprising an ionic-conductive polymeric compound containing one or more trivalent boron atoms. Nishiura et al. ('268) teaches on page 16, Example A-1 teaching the claimed invention where Y is an acryloyl group and q1=0. Nishiura et al. ('268) teaches on page 10, that the electrolytic salt can be LiBF4, LiClO4, LiPF6, etc. Nishiura et al. ('268) teaches on page 40, claims 30-31, a cell comprising a positive electrode made of a double metal oxide and a negative electrode comprising a lithium metal, etc. which is linked through the polymeric electrolyte. Nishiura et al. ('268) teaches on page 16, that it is known to use acryloyl groups or methacryloyl groups when the oxyalkylene groups are0, 1 or 2. Nishiura et al. teaches on page 37, that Y represents a polymerizable functional group. Nishiura et al. ('268) teaches on page 6, that R of the formula (8) has

a molecular weight of at least 150 and at most 1,700,000. Therefore the boron-containing compound would have a molecular weight of 300-1000.

5. Claims 1-2, 7-8, 11-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Yokoyama et al. (JP 2002-348323, translation and abstract) or Yokoyama et al. (WO 03/031453, abstract).

Yokoyama et al. ('323) teaches a polymerizable compound with high conductivity which is useful as a material for electrochemical devices such as secondary battery and used in an electrolyte. The polymerizable borate compound is obtained by esterification of a polymerizable compound represented by Formula (1) XO(AO)nH, where X is an acryloyl group or a methacryloyl group; AO is a 2-4 C oxyalkylene group and n=1-100 with boric acid or boric acid anhydride. Yokoyama et al. teaches on page 5, [0024] of the translation that the salts can be LiClO4, LiAsF6, LiPF6, LiBF4, etc.

Yokoyama et al. ('453) teaches a secondary battery employing an electrolyte comprising a boric ester compound which comprises reacting a compound represented by Formula (1) with a boron compound represented by formula (2). In formula (1) the X group can be an acryloyl or a methacryloyl. Yokoyama et al. teaches on page 24 of the patent that the salts can be LiClO4, LiAsF6, LiPF6, LiBF4, etc.

6. Claims 1-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Yokahama et al. (6,833,220).

Yokoyama et al. teaches a secondary battery comprising an electrolyte comprising an ionic compound and an organic polymer compound wherein the organic polymer compound comprises a boric acid ester compound obtained by the estification of the compound represented by Formula (1) with boric acid or boric anhydride. Yokoyama et al. teaches in column 34, an electrolyte for a battery comprising Formula (2) Z2-[(A2O)m-R2]b where R2 represents a group represented by Formula (3). Yokoyama et al. also teaches in columns 33-34, claim 1 and 7, an electrolyte for a battery comprising Formula (1) Z1-[(A1O)l-R1]a and further comprises a polymerization product of the compound of Formula 4 where R5 represents a group represented by Formula (5). Yokoyama et al. teaches in column 11, that the salts can be LiClO4, LiAsF6, LiPF6, LiBF4, etc.

Double Patenting

7. Claims 1-2 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 6, 9, 11, 13 of U.S. Patent No. 6,998,465. Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Patent No. 6,998,465 claims a secondary battery comprising an electrolyte comprising a boric acid ester compound obtainable by esterifying the compound of formula (1) with a boron-containing compound of Formula (2).

8. Claims 1-21 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9 of U.S. Patent No. 7,230,057. Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Patent No. 7,230,057 claims an ion-conductive polyelectrolyte for an electrochemical device comprising a polymer obtained by polymerizing the polymerizable composition of claims 1 or 2 in which the oxyalkylene groups having 2-4 carbon atoms and the molar ratio between compound of formula 2 and the compound of formula 3 is 0.5-4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to /Laura S. Weiner/ whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Laura S Weiner/
Primary Examiner
Art Unit 1795

February 11, 2008